**Southeast Fisheries Science Center**
**Mississippi Laboratory**
**Trawling Surveys Unit**

1. *To what extent do fishery independent survey data quality, statistical precision, and timeliness issues impact overall assessment accuracy, precision and timeliness?*
Most data collected during trawling surveys are inspected and edited within 30 days of survey completion. Organisms that cannot be identified in the field are returned to the lab for further scrutiny. Those that cannot be identified in the lab are then sent to recognized experts for identification. Such efforts require from 6 months to a year and in some cases species cannot be determined. Frequently encountered species do not present this problem. Field data are collected using the Scientific Computing System (SCS) and Fishery Scientific Computing System (FSCS). The SCS electronically collects non-biological data such as position, depth, weather, sea state, etc. while the FSCS electronically collects biological data such as catch weight, numbers and weights of species, size measurements, sex, and maturation stage. The FSCS performs real time data checks in the form of supplied range tests based on empirical data. At the end of each station, biological data are inspected to assure that sampling protocols have been met. The catch/sample is not discarded until all protocols have been completed. The data are scrutinized again shoreside upon survey completion. All shipboard checks are run again in addition to additional checks regarding space and time (i.e., location, date/time, towing speed, and transit speed between stations). Rigorous QA/QC eliminates human error to the extent possible thereby improving precision of population estimates.

2. *What are the major fishery independent survey successes and how should they be supported?*
Major successes are measured by the utility of the data collected. Trawling surveys do not target specific species but are general resource assessment surveys. Major successes include the Texas Closure study, recruitment indices for juvenile red snapper, and monitoring the hypoxic zone off the Louisiana coast. A Summer trawling survey is conducted off the Texas coast (as well as the rest of the US Gulf of Mexico) prior to the opening of shrimp season in order to evaluate the effectiveness of the Texas Closure management technique; as well as provide data for an annual shrimp stock assessment. Shrimp (*Farfantepenaeus aztecus, F. duorarum,* and *Litopenaeus setiferus*) comprise one of the most valuable fisheries in the GOM. The Summer Survey also collects hydrographic data off the Louisiana coast where a seasonal hypoxic zone occurs between 5 and 20 fathoms. A CTD instrument package is used to profile the water column at each station and collects temperature, salinity, dissolved oxygen, percent light transmission, and fluorometry. A Fall survey collects age-0 and age-1 red snapper which are used as a recruitment index for a red snapper stock assessment. While the shrimp fishery is one of

the most valuable commercial fisheries in the GOM, the red snapper fishery not only supports a commercial fishery but is also one of the most valuable recreational fisheries.

3. *What are the major fishery independent survey limitations/weaknesses and how could they be resolved? Define potential improvements and priorities for recommended improvements.*
   The major limitation of trawling surveys is relatively weak precision of population estimates. This is a common problem with most fisheries data and can be solved by increasing the number of stations completed per survey.

4. *To what extent do fishery dependent data quality, statistical precision, and timeliness issues impact overall assessment accuracy, precision and timeliness?*
   N/A

5. *What are the major fishery dependent data sources successes and how should they be supported?*
   N/A

6. *What are the major fishery dependent data limitations/weaknesses and how could they be resolved? Define potential improvements and priorities for recommended improvements.*
   N/A

7. *What recommendations do you have for prioritizing fishery-independent and fishery-dependent data collection improvements?*
   N/A

8. *To what extent are fishery independent and fishery dependent data readily accessible to Center stock assessment scientists and to various external researchers who may wish to replicate NMFS stock assessments?*
   As previously stated, fishery independent data from trawling surveys are available for analysis within 30 days of survey completion.

9. *Identify the highest priority needs for improving fishery dependent and fishery independent data. Define potential improvements.*
   Increase sample sizes in order to reduce variation and improve precision.

SEDAR Contributions
SEDAR 05 – Atlantic and Gulf of Mexico King Mackerel
SEDAR 07 – Gulf of Mexico Red Snapper
SEDAR 09 – Gulf of Mexico Grey Triggerfish, Greater Amberjack, and Vermilion Snapper
SEDAR 13 – Small Coastal Sharks
SEDAR 16 – South Atlantic and Gulf of Mexico King Mackerel

SEDAR 21 – HMS Sandbar, Dusky and Blacknose Sharks
SEDAR 31 – Gulf of Mexico Red Snapper